THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 35

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL K. GOODMAN,
CHARLES F. RAASCH,
and FARZAD NOORBEHESHT

Appeal No. 1997-0403
Application 08/174,215[1]

ON BRIEF

Before KRASS, BARRETT, and BARRY, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

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[1] Application for patent filed December 28, 1993, entitled "Keyboard Pointing Device," which is a continuation of Application 07/939,821, filed September 3, 1992, now abandoned.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-11.

We reverse.

BACKGROUND

The disclosed invention is directed to a method and apparatus for emulating a mouse pointing device using the conventional keys of a keyboard. When a special function key is not active, conventional scan codes are transmitted in response to actuation of the keys. When the special function key is active, a keyboard controller interprets scan code signals from selected keys as mouse movement data.

Claim 4 is reproduced below.

> 4. A mouse pointer emulating apparatus for controlling the position of a mouse pointer on a computer display screen for a computer, operable with a conventional mouse pointer, said mouse emulating apparatus comprising:
>
> a keyboard having a plurality of unmodified keys which activate key switches when depressed, said keyboard operating in first and second modes;
>
> a keyboard controller coupled to said key switches, said controller configured to scan said key switches to determine which of said plurality of keys are active and to generate scan code data responsive to keyswitch signals generated by active keys; and

> a special function key coupled to said keyboard controller, said keyboard controller responsive to said special function key such that when said special function key is active, said keyboard is in said first mode wherein said keyboard controller responds to said keyswitch signals resulting from activation of selected ones of said plurality of keys to transmit mouse data indicating movement of a mouse pointer on the computer display instead of said scan code data, said mouse data packets generated by said keyboard controller including X-coordinate and Y-coordinate values which represent a change in position of said mouse pointer on said display screen to effect pixel-by-pixel movement of said mouse pointer on said display screen, said keyboard controller further transmitting said mouse data to said computer at a preselected frequency, and when said special function key is not active said keyboard is in said second mode wherein said keyboard transmits conventional scan code data in response to said keyswitch signals resulting from activation of selected ones of said plurality of keys.

The Examiner relies on the following prior art:

Grant	5,119,078	June 2, 1992
Franz et al. (Franz)	5,124,689	June 23, 1992
Kato[2] (Japanese Kokai Patent Application)	1-200285	August 11, 1989

Claims 4, 8, 9, and 11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Franz.

[2] A translation of Kato has been prepared by the Patent and Trademark Office and accompanies this decision.

Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over Franz and Grant.

Claims 2 and 3 stand rejected under 35 U.S.C. § 103 as being unpatentable over Franz and Kato.[3]

Claim 10 stands rejected under 35 U.S.C. § 103 as being unpatentable over Franz.

Claims 5-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Franz and Kato.

We refer to the Final Rejection (Paper No. 18) (pages referred to as "FR__"), the Examiner's Answer (Paper No. 23) (pages referred to as "EA__"), and the Supplemental Examiner's Answer (Paper No. 26) for a statement of the Examiner's position and to the Appeal Brief (Paper No. 22) (pages referred to as "Br__"), Appellants' Reply to the Examiner's Answer (Paper No. 24) (pages referred to as "RBr__"), and Appellants' Response to Examiner's Supplemental Answer (Paper No. 27) for a statement of Appellants' arguments thereagainst.

OPINION

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[3] Since claim 1 is rejected over Franz and Grant, we presume the rejection of claims 2 and 3 is over the combination of Franz, Grant, and Kato.

Claims 4, 8, and 9

Appellants argue (Br11) that claim 4 recites "a keyboard having a plurality of unmodified keys," a keyboard controller which "generate scan code data responsive to keyswitch signals generated by active keys," and that in the first (pointer) mode the keyboard controller responds to "said key switch signals" to transmit mouse data instead of scan code data. Thus, Appellants argue that claim 4 recites converting normal scan codes generated from conventional keys into mouse data and distinguishes over Franz which uses a specially configured multipurpose keyswitch (such as the J key) which has direction sensors or other direction sensing devices in addition to the normal switching devices. "Thus, [in Franz] additional connections and special circuitry are required, and additional processing must be performed within the computer in order to accommodate this method of emulating mouse data (see Col. 10, lines 1-14)." (Br6.)

The Examiner admits that Franz does not disclose converting normal scan codes from conventional keys into

mouse data, but contends that such feature is not claimed (EA7). The Examiner does not analyze the claim language.

We disagree with the Examiner's claim interpretation. It is understood that "a keyboard having a plurality of unmodified keys" is open ended and does not preclude the keyboard from also having modified keys. However, the recitation that the keyboard controller acts to "generate scan code data responsive to keyswitch signals generated by active keys" and, when the special function key is active, "responds to said keyswitch signals resulting from activation of selected ones of said plurality of keys to transmit mouse data" requires that keyswitch signals come from the unmodified keys. That is, the limitation of "responds to said keyswitch signals resulting from activation of selected ones of said plurality of keys to transmit mouse data" must refer to the "plurality of unmodified keys," no other plurality of keys being defined.

Because Franz does not disclose using unmodified keys to provide the mouse data, and no obviousness reasoning has been provided to overcome this difference, the Examiner has

failed to establish a prima facie case of obviousness. The rejection of claims 4, 8, and 9 is reversed.

Claims 5-7

Kato is applied to teach increasing the speed of a cursor if the cursor key is continuously depressed. We find that Kato does not cure the deficiencies of Franz with respect to the rejection of parent claim 4. Accordingly, the rejection of claims 5-7 must be reversed.

Claim 11

Appellants argue that the rejection of claim 11 should be reversed for the reasons set forth with respect to claim 4 (Br13). The Examiner does not make any comments.

Claim 11 does not contain the same limitation about "unmodified keys" as claim 4 and, thus, we cannot rely on the same reasons as claim 4.

However, claim 11 recites "said keyboard controller responsive to the special function key, when active, to interpret signals from other ones of said selected keys and generate mouse data packets, wherein said signals provided by said selected keys to said keyboard controller when said

special function key is active are identical to signals provided by said selected keys to said keyboard controller when said special function key is not active" (emphasis added). This distinguishes over Franz where in the pointing mode, the system reads the sensors (figure 10, box 148) rather than the scan key code. Franz uses different signals depending on whether it is in the typing mode or the pointing mode. The Examiner does not address these claim limitations and has failed to establish a prima facie case of obviousness. The rejection of claim 11 is reversed.

Although we have reversed the rejection of claim 11, we comment on Appellants' argument that "[n]owhere do any of the Takeda, Franz, et al., or Grant patents disclose or suggest movement in a diagonal direction upon simultaneous activation of two of the selected keys" (Br13).

The Examiner disagrees "since a mouse pointer can be moved in a diagonal direction on a display when a user simultaneously activates two of the selected keys (218, J or K keys)(see column 9, lines 51-58)" (EA8).

It is not clear that a diagonal direction can be achieved with the multi-purpose keyswitch in Franz. Franz

states (col. 8, lines 29-31) that one example of a multi-purpose keyswitch is said to be disclosed in U.S. Patent 4,680,577 to Strayer et al. (Strayer). The device in Strayer appears to be limited to one direction at a time. In any case, the user in Franz uses only one key as the pointing key, the J key for a right-handed mode and the F key for a left-handed mode, where the D and F keys in the right-handed mode and the J and K keys in the left-handed mode are pointing event keys analogous to mouse buttons (col. 15, lines 11-17). The thumbswitches 218 are mode changing switches corresponding to the claimed special function key, they are not pointing keys. Thus, even if Franz did allow a diagonal direction, it would not use two keys. We also refer to Appellants' arguments at pages 2-3 of the Reply Brief. For this additional reason, the rejection of claim 11 is reversed. The background of Strayer discloses using conventional alphanumeric keys around the home position to provide four directions of cursor movement (col. 1, lines 33-44); however, it does not disclose using keys in the pointing mode.

Claim 10

The Examiner considers claim 10 to be a method claim corresponding directly to the apparatus in claim 4 and rejects it for the reasons stated with respect to claim 4.

Appellants disagree that claim 10 is an exact restatement of claim 4 in method form, but argue that even granting that the two claims generally track one another, the rejection of claim 10 should be reversed for the reasons stated with respect to claim 4 (RBr3).

Claim 10 recites "a keyboard having a plurality of unmodified keys, one of said keys being a special function key, selected others of said plurality of keys preselected to indicate mouse pointing operations when said special function key is active," which requires that the mouse pointing keys are selected from the "plurality of unmodified keys." As discussed in the rejection of claim 4, we find that the use of "unmodified keys" is not disclosed or suggested in Franz. Thus, the Examiner has failed to establish a prima facie case of obviousness. The rejection of claim 10 is reversed.

Claim 1

Claim 1 contains the same limitation, "wherein said signals provided by said selected keys to said keyboard controller when said special function key is active are identical to signals provided by said selected keys to said keyboard controller when said special function key is not active," as claim 11. We found in connection with claim 11 that this limitation is not disclosed in Franz.

The Examiner states (EA4-5):

> Franz et al fail to disclose a keyboard with mouse pointer move keys.
>
> Grant teaches a mouse pointer emulating apparatus comprising a keyboard (10) with mouse pointer move keys (2,4,6,8) and a display (4) (see figures 2, 7 and column 3, lines 64-68). It would have been obvious to have modified Franz et al with the feature of applying mouse pointer move keys instead of a direction sensor as taught by Grant, since Franz et al have a J key with a direction sensor [which] could perform [the] same function as mouse pointer move keys (2, 4, 6, 8) of Grant when the apparatus of Franz et al in on [sic] a mouse pointer function mode. Thus, the signals provided by the mouse pointer move keys are identical whether the special function key is active or not active in the apparatus of Franz et al as modified by Grant.

Appellants argue that "the Grant patent . . . does not provide mouse movement keys, but instead provides cursor movement keys" (Br9) and "the Grant reference shows conventional cursor keys, not mouse pointer keys" (RBr6).

The Examiner disagrees, stating (EA7): "Grant teaches mouse movement keys (2,4, 6, 8) move a cursor in up, down, left and right direction on a display (see Grant's figure 7) and cursor movement data is part of mouse data because a mouse can control the movement of cursor on a display." The Examiner also states (EA7): "[I]t is well known that a computer will convert the scan code of cursor keys (2, 4, 6, 8) into X- and Y-coordinate data to control the movement of a cursor. The cursor movement data is part of the mouse data."

The Examiner's position is untenable. While the term "cursor" can be used to refer to a movable, visible mark that represents the position for character entry during a keyboard entry mode and for a graphical pointer during a pointing mode, the arrow keys 2,4, 6, 8 are cursor control keys which, as is well known, move a cursor from one line to another or from one character to another during a keyboard entry mode--they do not control the pixel-by-pixel location of a pointer and do not provide mouse data. Grant discloses a cursor control device for a pointing device as unit 146 in figure 8, but this does not use conventional keys. We agree

with Appellants' argument that the scan code translation to an X- and Y-direction "in no way corresponds to the provision of X- and Y-coordinate values by the keyboard controller to the host representing the number of pixels that a mouse pointer is to be displaced on the display screen in the X- and Y-directions" (RBr2).

Because neither Franz nor Grant discloses or suggests that the same signals provided by the keys are interpreted by a keyboard controller either as conventional scan code data or as mouse data depending on whether a special function key is active or not active, the Examiner has failed to establish a prima facie case of obviousness. The rejection of claim 1 over Franz and Grant is reversed.

Claims 2 and 3

Kato is applied to teach increasing the speed of a cursor if the cursor key is continuously depressed. We find that Kato does not cure the deficiencies of Franz and Grant with respect to the rejection of parent claim 1. Accordingly, the rejection of claims 2 and 3 is reversed.

CONCLUSION

The rejections of claims 1-11 are reversed.

REVERSED

ERROL A. KRASS Administrative Patent Judge	)	
LEE E. BARRETT Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
LANCE LEONARD BARRY Administrative Patent Judge	)	

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